

Dec '78

A Consumer Video Products Guide



Consumer Electronics Group
Electronic Industries Association
2001 Eye Street, N.W.
Washington, D.C. 20006
202/457-4900



A CES Consumer Education Publication



Consumer Electronics Group
Electronic Industries Association
Copyright 1978—Printed in U.S.A.

video products

TELEVISION PROJECTION TELEVISION
. PERSONAL COMPUTER VIDEO CASSETTE
RECORDER VIDEO GAMES VIDEO
ACCESSORIES

TELEVISION

The television receiver is probably the most complex device in your home. You depend on it daily for entertainment, news and information. Because it is such an important part of your life, a little extra care in its selection, installation and maintenance will add to your enjoyment and satisfaction.

Color and Black-and-White

Television sets are available to meet almost every viewing requirement and preference, from ultra-miniature portables which literally will fit in a coat pocket to giant theater-like installations with bigger-than-life pictures. There is TV that includes stereo phonographs, FM-AM radios and tape players, TV with built-in video recorders, TV which can be operated out-of-doors from rechargeable batteries, TV with personal-listening earphones and TV sets which automatically turn themselves off after you fall asleep.

Color television has completely taken over family viewing, and there are now one or more color sets in the vast majority of American homes. But the demand for black-and-white sets continues strong, particularly in the area of "specialty" use—lightweight tote-alongs, bedroom TVs with wake-up alarms and so forth. Although large-screen black-and-white sets are still available, portables with screens measuring 12 inches diagonally comprise by far the most popular category.

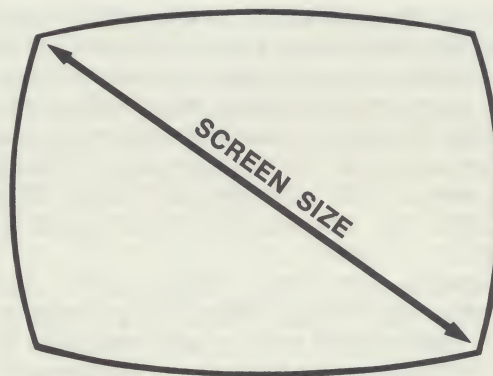
Color TV has spread from the living room to the recreation room, the den, the kitchen and the bedroom. Battery-operated color sets are available for out-of-home use. While color portables are increasing in popularity, the living room TV receiver is often the furniture-fashioned console, which is sold in many styles to match or accent virtually any decor.

Obviously, the type of set you choose should be determined by where and how you intend to use it. There's no hard-and-fast guide to screen size in relation to room size, but sets with screens measuring 19 inches (diagonally) or more are generally considered "family" sets, while those with smaller screens are usually used for personal viewing.

Screen Size

By industry practice, television screen size is generally measured by inches from corner to corner of the viewable picture. In advertising, this is usually identified as "diagonal measurement". Sometimes you'll also see television sets advertised by square inches of viewable picture. For example, a set with a 19-inch diagonal screen measures about 185 square inches in picture area, and a 25-inch screen has an area of about 315 square inches.

Direct-view color sets are available in screen sizes ranging from 25 inches diagonally down to about



4 inches. Black-and-white sets generally run from about 5 to 22 inches, although some specialized models actually have screens smaller than 2 inches in diagonal measurement.

Projection sets for the home have screens as large as 4½-7 feet in diagonal measurement. They're discussed in a separate section of this booklet.

Color Television

Color sets are much more complex than black-and-white receivers and generally cost at least three times as much. Because color is a much more substantial investment than black-and-white, it is particularly important to shop carefully when considering a new color TV. Color sets generally have the same basic controls as black-and-white sets: tuning, brightness, contrast and volume. In addition, they have two other controls—color (sometimes called chroma or color intensity) and tint (or hue). A color set is tuned in exactly the same manner as a black-and-white set, except that the two additional color controls are varied to produce the most pleasing picture.

Until you're completely familiar with a color set, the simplest way to tune it is to turn the color control down until the picture is black-and-white. Then tune a good monochrome picture. Next, adjust the color control for the proper color intensity, making sure it is neither too pastel nor too fluorescent. Then adjust the tint control until faces appear natural. When the flesh tones are correct, the other colors are in balance.

Fortunately, with most modern color sets you rarely have to go through this tuning process. In fact, many of today's color sets actually are easier to tune than the black-and-white sets of a few years ago, thanks to a new automatic circuit called automatic fine tuning (AFT) or automatic frequency control (AFC) featured in the vast majority of new color sets. This circuit electronically locks the set to the channel selected. If a color channel isn't precisely tuned, the color may be lacking or incorrect. AFT prevents this problem and completely eliminates the need for manual fine tuning under most circumstances.

Many modern color sets have other automatic circuits, which may control color intensity, brightness, contrast, tint, black and white levels and help assure consistency of color from scene to scene, program to program and channel to channel. Another feature on some color TV sets is an automatic light-sensing device (like the electric eye in a film camera) which adjusts brightness and contrast to the optimum levels for the lighting conditions in the room. In most sets, automatic controls may be disengaged if you should ever prefer to tune manually. *For best understanding of the automatic controls in your set, be sure to read the instruction booklet.*

Tuning Systems

All sets sold today are equipped to receive both very high frequency (VHF channels 2 through 13)

and ultra-high frequency (UHF channels 14 through 83). Unlike the UHF tuning on sets of a few years ago, current sets are designed so that the tuning of UHF channels is comparable to the tuning of VHF channels, as required by recent Federal Communications Commission regulations. In even the lowest-price black-and-white sets, the UHF channels click into place in the same manner as VHF. Other sets may have either single-knob channel selectors to tune both VHF and UHF channels or pushbutton tuning of intermixed "V" and "U" channels. If there are several UHF channels in your area, you'll probably want to consider a set on the basis of UHF tuning convenience.

An increasing number of sets now feature all-electronic tuning (also called varactor tuning, after the solid-state device which makes it possible). This system eliminates the mechanical tuner, with its multiplicity of contacts which have made it the most failure-prone part of the receiver. Some of today's electronically tuned sets have no moving parts at all and change channels when the finger is placed on a "touchbutton".

Solid-State Circuits

All modern color and black-and-white sets employ solid-state circuits exclusively which means that all circuit tubes have been replaced by semiconductors, such as transistors, diodes and integrated circuits. Solid-state circuitry makes possible substantial savings in energy consumption—many new color sets use less power than a 100-watt light bulb—costing only pennies a day. It also helps cut down repair bills, since semiconductors are far less likely to fail than tubes. And because they produce very little heat, they're less apt to contribute to the failure of other components.

Remote Control

Wireless remote control is an increasingly popular convenience with color sets. The simplest units let you switch the set on and off, change channels in sequence and adjust volume without leaving your easy chair. The most elaborate remote controls permit you also to adjust color and tint, to tune directly from any one channel to any other, or even to cue an on-screen display of the channel number tuned and the correct time. Generally speaking, the cost of remote-control sets increases with the number of functions they let you accomplish.

PROJECTION TV

Giant-screen projection television is a specialized and growing segment of the color TV field. This type of TV resembles a movie projection system in that the picture is thrown onto a large screen by means of an optical lens system. There are two principal types of projection TV systems: The three-tube type, which uses one tube for the projection of each primary color, and the generally less-expensive single-tube version which employs a modified small-screen television set (with special lens) as the source of the picture. Viewing a television picture on a projection set is an immensely absorbing and engrossing experience. Projection sets just don't fit in everywhere and require a relatively large amount of space. If you think you may be interested in projection for your next color set, be sure to view demonstrations of several makes and models before making your choice, as there are many different types of TV projection systems.

New Uses for the TV Set

The television set originated as a machine with a single purpose—to receive and display programs broadcast over the airwaves. But today, primarily because of the versatile and high-quality color display screen, the television receiver is being adapted to new uses, such as the display unit for a home computer, and there are many additional ones to come. In fact, many experts feel that the TV set is now evolving into the "home video terminal" of the future.

Cable television, or CATV, feeds programs into many American homes by closed-circuit, providing a greater variety of programs, clearer pictures or both, as compared to over-the-air reception. Some cable systems are now adding two-way capability, permitting the viewing audience to express opinions, order products or take exams. Some two-way cable systems are adding fire and burglar alarm systems which automatically notify the fire or police department in an emergency.

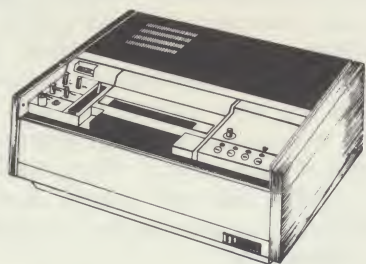
Subscription television, or "pay TV", brings recent movies and special programs such as operas, rock concerts and nightclub acts not available on regular TV into the home, without commercial interruption, either via cable TV or over the air. Subscribers pay either a monthly subscription fee or a per-program charge.

VIDEO CASSETTE RECORDER

The Video Cassette Recorder (VCR) is one of the fastest growing consumer products ever introduced. It is a versatile television attachment that permits

viewers to record programs off the air for personal viewing at a later time or to record one channel while viewing another. Broadcasts may even be recorded when no one is home or after everyone has gone to bed through the use of a timer.

The Video Cassette Recorder can also be used to produce instant see-and-hear electronic "home movies" which may be played back through the television set; this requires an accessory TV camera. It can play special pre-recorded videocassettes featuring motion pictures and other program material, available for purchase and rental.

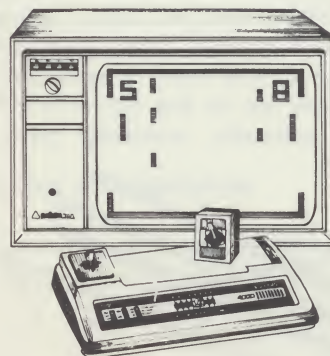


There are several different systems or formats, each of which use cassettes of different types. Any one system's cassettes cannot be used on another system's product, whose cassettes are not interchangeable. The recording and playback time capability also varies by product. When shopping for a video recorder, see a demonstration, and select the format most suitable to your needs. Be sure to ask the salesperson about availability of accessories.

VIDEO GAMES

Video games started with simple "table tennis" attachments to the TV set, and now have progressed to sophisticated contests of skill rivaling coin-machine arcade games. Games may be changed

by inserting a new program cartridge. Some video games actually may be converted to home computers with the addition of program cartridges and keyboards. Other home computers are now proving extremely popular with hobbyists and are expected to find many new home uses.



Other Video Services

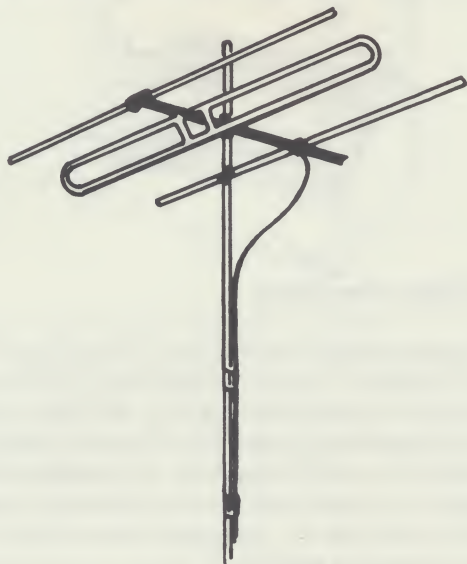
Anticipated in the near future are such new services as videodisc players which will play recorded see-and-hear records through the TV, attachments which superimpose captions for the hearing-impaired on selected television programs, and devices which will supply a constant stream of continually updated "tele-text" services on demand—including news, weather and market reports.

Antennas

The best television set will show a poor picture if it doesn't receive a good, strong signal from the antenna. A VHF (very high frequency) and a UHF (ultra high frequency) built-in antenna, provided with most portable models, will be satisfactory in some

cases, specifically where the television stations aren't too distant and there are few obstructions such as tall buildings or mountains to cause "ghosts". However, an outdoor antenna often is necessary for good reception. If most of your neighbors use outdoor antennas, chances are you'll need one, too.

If you already have an outdoor antenna, it may have to be replaced when you buy a new set. Antennas and their lead-in wires deteriorate with age. The best way to tell if you need a new antenna is to connect your new set to the old antenna and look at the picture critically, watching particularly for



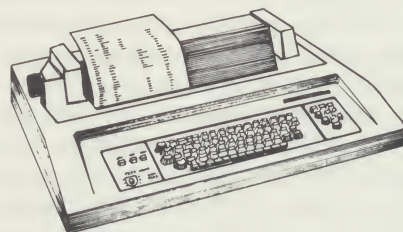
ghosts, smears and any difficulty in receiving color. VHF and UHF channels require different types of antennas; if you can receive both types of channels in your area, a combination VHF-UHF antenna is usually sufficient, but in some extreme problem areas two separate antennas are required. Many portable televisions come equipped with two antennas, one for VHF and the other for UHF. If you use them instead of an outdoor system, make certain they're both attached to the proper antenna terminals at the back of the set.

Note: For the safety of your family, outdoor antennas and lead-in wires should be kept well away

from power lines—take measures to be sure they cannot fall onto power lines especially during storms or high winds. All outdoor systems should be grounded to provide protection against voltage surges and built-up static charges, including lightning. Insist that your installer follow these procedures.

Shopping for a Television

Because you may well be depending on your next television set to display one or more of the new video services, the selection of a new TV becomes more important than ever. If you're shopping for a new family set, as opposed to a specialized "personal TV", you'll probably want to be sure the screen



is large enough to provide maximum enjoyment of these services. Although it's called a television receiver, what you're really buying is a home video terminal.

While the manufacturer stands behind the set with his warranty, a reputable retailer can also go far in helping to assure you of satisfaction. The retailer should be able to demonstrate a reasonable good picture in the store to help you compare sets. He should also have a good selection of models and screen sizes, all connected to the power line and an antenna system.

Select your set carefully with an eye to crispness and sharpness of picture, pleasing color tones and lack of distortion. Watching titles or other print ma-

terial on the screen is a good test. Check for uniform size of the letters, crispness and legibility; you should be able to see the whole thing, including the first and last letters. But don't choose by picture alone; turn up the sound to determine whether it is balanced and pleasing, particularly in musical passages, and whether speech is easily intelligible. (Some new sets offer new approaches to TV sound.) Take over the controls yourself to determine how easy it is to bring in a good picture.

Paying for Your Television

Almost as important as selecting the set you want is deciding how you will pay for it. You may want to finance it through the store itself, or perhaps go to a bank or savings and loan and borrow the money. On the other hand, you may wish to pay cash. If you decide to finance, study all of your options. Lenders are required by law to spell out the amount of interest and other fees they charge, so that different types of loans and financing may be compared directly. Credit costs money, so it's best to borrow only as much as you need and repay it as rapidly as possible. Remember, it's a good idea to shop for your financing as carefully as you shop for your television.

Warranties and Service Policies

The warranty is an important feature of your new set, and it can vary from brand to brand and even from dealer to dealer. The basic minimum manu-

facturer's limited warranty on a black-and-white set is 90 days coverage on all parts except the picture tube, which is warranted for one year. For color sets, parts are generally covered for a year and the picture tube for two years. Labor to make warranty repairs on both color and monochrome sets is included for at least the first 90 days. Some sets have a full year labor warranty. Be sure to understand these terms when shopping. If your set has a 90-day labor warranty, you don't have to pay anything for covered repairs in the first 90 days; after that period, but during the first year, when parts are still warranted, you would be required to pay the cost of the labor but not the parts.

Under the new federal warranty law, your warranty will be labeled FULL or LIMITED. This information should be available to you prior to purchase. Generally, the terms of the warranty will be on a tag or label affixed to the product, on a poster adjacent to the displayed item, printed on the package, or in a binder maintained by the dealer. A copy of the warranty will also be in the instruction information packet enclosed with the product.

In simple language the warranty must describe (1) what is covered and what is excluded; (2) what the warrantor will do in event of a defect, malfunction or failure to conform with the warranty, including a statement as to which items and services will be paid for and which won't; and (3) a step-by-step explanation of what you should do to get the warranty honored.

BE SURE TO READ AND UNDERSTAND THE TERMS OF THE WARRANTY BEFORE MAKING YOUR PURCHASE!

Some manufacturers may ask you to return a registration card to place on file proof of the date your product was purchased. These cards are also used by manufacturers to notify you in the event of a safety notice. However, failure to return the card will not affect your right to obtain warranty service so long as you can prove the date you purchased the product.

A service policy is an optional extension of the

warranty, for which you pay extra. It's simply a form of insurance, generally covering all repairs for a specific period of time.

Service

When you have trouble, you may be able to avoid an unnecessary service call by making these simple checks:

1. Make sure the power cord is plugged in and any wall switch controlling the TV set is "on".
2. If the TV still does not operate check the house fuse for the circuit.
3. Be certain the antenna lead-in wires are securely fastened to the proper terminals at the back of the set and that the bare antenna leads aren't touching each other.
4. If the set has neither picture nor sound, push the red circuit-breaker button at the back of the set, if the receiver has such a device. Refer to the instruction book to locate it.
5. If the sound is normal but you have no picture, turn up the brightness control and try another channel. The station may be at fault.
6. If the picture is normal but there's no sound, adjust the fine tuning and volume controls. Try another channel.
7. If there's no color, adjust the color and fine tuning controls. Change channels—you could be watching a black and white program.
8. If faces are green or purple, adjust the tint control.
9. If you live in an apartment house with a master antenna or are connected to CATV, the trouble may be in the system instead of the set. Check with others who are connected to the system. If they are having similar problems, the company maintaining the system should be contacted instead of the TV service technician.

If your set should require service during the warranty period, call the retailer from whom you bought the set. He'll either have the repair made by his service department or recommend an authorized service agency. If you've moved since you bought the set, consult the yellow pages to find an authorized service dealer for the brand you own. Generally, you must take your portable set to the service shop for warranty repairs. Larger models are usually serviced in the home.

To determine whether your set is still covered by the warranty, be sure to keep the instruction book and sales slip where you can locate them easily. You'll have to show the sales slip or other evidence of purchase date to the technician who provides the warranty service. The instruction book should also be consulted to prevent unnecessary service calls that might not be covered under your warranty.

SUMMARY FOR PURCHASE, INSTALLATION AND SERVICE

Purchase and Installation

- A wide variety of screen sizes and cabinet types is available, so you may carefully choose the set which best meets your needs.
- Screen sizes are generally identified by corner-to-corner (diagonal) measurements.
- Color sets are far more complex than black-and-white, but improvements have made them just about as simple to operate.

- Electronic tuning is a major advance which makes tuning easier.
- Solid-state construction reduces energy consumption and substantially increases reliability in modern TV sets.
- New advances in video are turning the television set into a "home video terminal" and making the choice of a quality receiver even more important.
- Select your dealer with care on the basis of his reputation and the variety of models he can demonstrate.
- Even though the set you choose has a built-in antenna, you may require an outdoor installation. An inadequate antenna system can spoil your enjoyment of the best television receiver.

Warranty and Service

- The warranty is an important feature of your set. Be certain you understand the terms, because not all warranties are alike. Retain your purchase invoice so that you have a record of the date you purchased the set (needed to obtain warranty service) and so you know whom to call for warranty service.
- Before calling for service, make a few common-sense checks (listed above) which may avoid an unnecessary call or charge.
- Select your service shop with care. Insist on an estimate before giving your okay for expensive repair jobs.